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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/003,123	11/26/2001	Andrew G. Swales	SAA-5-2	6275

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EXAMINER

LEZAK, ARRIENNE M

ART UNIT PAPER NUMBER

2143

DATE MAILED: 05/12/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

11

Office Action Summary

Application No.

10/003,123

Applicant(s)

SWALES ET AL.

Examiner

Arrienne M. Lezak

Art Unit

2143

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 11-31 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 11-31 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. ____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date ____. | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Response to Arguments

1. Applicant's arguments with respect to Claims 11-31 have been considered but are moot in view of the new ground(s) of rejection. Further, Examiner acknowledges that Applicant has amended Claims 13, (typographical error) and 24 (substantively), which are further rejected as enumerated herein below.

Claim Rejections - 35 USC § 112

2. Regarding Claim 24, Examiner acknowledges removal of the term "simultaneous" from the claim language, and thus withdraws the rejection based upon 35 USC § 112, paragraphs 1 & 2.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 11-21, 25-29 & 31 are rejected under 35 U.S.C. 102(e) as being anticipated by US Patent 5,862,391 to Salas.

5. Regarding Claims 11-14 and 25, Salas discloses a network communication system, (Abstract; Col. 57, lines 30-67; Cols. 58-62), comprising:

- a master device for exclusively initiating a request message, (Col. 2, lines 3-12);
- a slave device being exclusively responsive to the request message header, (per pending Claim 13), exclusively initiated by the master device, (per pending Claim 14), (Col. 2, lines 3-32; Col. 6, lines 21-36; and Col. 26, lines 36-65) ; and
- an optimal communication stack protocol utilized to communicate the request message and the response message between the master and the slave devices, (Col. 6, lines 5-45), the optimal protocol comprising:
 - an IP protocol, (Abstract; Fig. 3; and Col. 2, lines 26-32);
 - a TCP protocol, (Abstract; Fig. 3; and Col. 2, lines 26-32); and
 - an application layer MODBUS protocol, (per pending Claims 12 & 25), wherein the building and parsing of the response message is responsive to a first part, or predetermined index of the request message, (Abstract; Fig. 3; Col. 2, lines 26-32; and Col. 26, lines 36-65).

Therefore this reference may reasonably be read to teach or describe every element or claim limitation of pending Claims 11-14 & 25.

6. Regarding Claims 15, 27 and 28, Salas discloses a network communication system comprising a set of predetermined response messages including at least one

predetermined response message, each predetermined response message being distinguishable by the first part of the request message wherein the predetermined response message is determined from the content of the first part of the request message and rapidly selected from the optimal communication stack for quickly responding to the request message, (Col. 6, lines 5-36). Examiner notes that protocols such as MODBUS, TCP/IP and Commnet inherently comprise predetermined response messages. Therefore this reference may reasonably be read to teach or describe every element or claim limitation of pending Claims 15, 27 & 28.

7. Regarding Claims 16-20, as noted above, Salas utilizes protocols such as MODBUS, TCP/IP, Ethernet and Commnet, which inherently comprise predetermined response messages including, an address resolution protocol request message, an Internet control management protocol request message, a TCP connection request message, a TCP disconnect request message or a MODBUS request message as a TCP data frame, (Col. 6, lines 5-45 and Col. 29, lines 28-43). Therefore this reference may reasonably be read to teach or describe every element or claim limitation of pending Claims 16-20.

8. Regarding Claims 21, 26 and 29, Salas discloses a network communication system wherein each device limits its message to a length that is less than both a TCP transaction length and a maximum transmission unit, (Col. 2, lines 20-32 and Col. 6, lines 5-36). Examiner notes that since Salas uses TCP/IP, the limitation of message length would be inherently compatible with the TCP/IP protocol. Therefore this

reference may reasonably be read to teach or describe every element or claim limitation of pending Claims 21, 26 & 29.

9. Regarding Claim 31, Salas discloses an Ethernet module wherein the control processing unit is operably coupled to a factory automation unit, (Fig. 2; Fig. 3; Col. 10, lines 15-67; and Col. 11, lines 1-18). Therefore this reference may reasonably be read to teach or describe every element or claim limitation of pending Claim 31.

10. Claims 11-21, 25-29 & 31 are rejected under 35 U.S.C. 102(e) as being anticipated by US Patent US 6,282,454 B1 to Papadopoulos.

11. Regarding Claims 11-14 and 25, Papadopoulos discloses a network communication system, (Abstract and Fig. 1), comprising:

- a master device for exclusively initiating a request message, (Col. 5, lines 30-67; Col. 6; and Col. 7, lines 1-19);
- a slave device being exclusively responsive to the request message header, (per pending Claim 13), exclusively initiated by the master device, (per pending Claim 14), (Col. 5, lines 30-67; Col. 6; and Col. 7, lines 1-19); and
- an optimal communication stack protocol utilized to communicate the request message and the response message between the master and the slave devices, (Col. 6, lines 46-62), the optimal protocol comprising:
 - an IP protocol, (Abstract);
 - a TCP protocol, (Abstract); and

an application layer MODBUS protocol, (per pending Claims 12 & 25), wherein the building and parsing of the response message is responsive to a first part, or predetermined index of the request message, (Col. 8, lines 15-25).

Therefore this reference may reasonably be read to teach or describe every element or claim limitation of pending Claims 11-14 & 25.

12. Regarding Claims 15, 27 and 28, Papadopoulos discloses a network communication system comprising a set of predetermined response messages including at least one predetermined response message, each predetermined response message being distinguishable by the first part of the request message wherein the predetermined response message is determined from the content of the first part of the request message and rapidly selected from the optimal communication stack for quickly responding to the request message, (Col. 8, lines 5-60). Therefore this reference may reasonably be read to teach or describe every element or claim limitation of pending Claims 15, 27 & 28.

13. Regarding Claims 16-20, as noted above, Papadopoulos utilizes protocols such as MODBUS, TCP/IP and Ethernet, which inherently comprise predetermined response messages including, an address resolution protocol request message, an Internet control management protocol request message, a TCP connection request message, a TCP disconnect request message or a MODBUS request message as a TCP data frame, (Abstract and Col. 8, lines 5-60). Examiner notes that protocols such as MODBUS, TCP/IP and Ethernet inherently comprise predetermined response

Art Unit: 2143

messages. Therefore this reference may reasonably be read to teach or describe every element or claim limitation of pending Claims 16-20.

14. Regarding Claims 21, 26 and 29, Papadopoulos discloses a network communication system wherein each device limits its message to a length that is less than both a TCP transaction length and a maximum transmission unit, (Abstract and Col. 8, lines 5-60). Examiner notes that since Papadopoulos uses TCP/IP, the limitation of message length would be inherently compatible with the TCP/IP protocol. Therefore this reference may reasonably be read to teach or describe every element or claim limitation of pending Claims 21, 26 & 29.

15. Regarding Claim 31, Papadopoulos discloses an Ethernet module wherein the control processing unit is operably coupled to a factory automation unit, (Col. 2, lines 25-30). Therefore this reference may reasonably be read to teach or describe every element or claim limitation of pending Claim 31.

Claim Rejections - 35 USC § 103

16. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

17. Claims 22, 23 and 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent 5,862,391 to Salas in view of US Patent 5,757,924 to Friedman.

18. Salas discloses the use of TCP protocol, however, Salas does not exclusively utilize TCP port number 502, (pending Claims 22 and 30), wherein any message not transmitted via the TCP port number 502 is ignored, (pending Claim 23).

19. Friedman discloses a network device wherein a firewall/router decided whether to pass a packet based on the source and/or destination IP address and the TCP port number, (Col. 3, lines 62-67 and Col. 4, line 1).

20. To incorporate the filtering method of Friedman into the Salas apparatus would have been obvious to one of ordinary skill in the art at the time of invention be applicant as indicated within the teachings of Salas. The motivation to combine is found within the Salas teachings pertaining to a port byte, indicative of which port a gateway message is to be transmitted on, (Col. 6, lines 26-28). As Salas provides a method for distinguishing transmission by port number, the enumeration of a specific port number, (like 502), would have been obvious, particularly in light of the use of a MODBUS protocol, (as taught by Salas), which inherently utilizes port 502. Thus, Claims 22, 23 and 30 are unpatentable over the combined teachings of Salas in view of Friedman.

21. Claim 24 is further rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent 5,862,391 to Salas in view of US Patent 5,375,070 to Hershey.

22. As noted herein above, Salas discloses optimizing a MODBUS/TCP/IP stack, (Col. 6, lines 5-45), however, Salas does not specifically disclose or describe optimizing a MODBUS/TCP/IP stack with a "finite state machine" that takes advantage of a priori assumptions. Hershey discloses the use of finite state machines for performance optimization, (Col. 18, lines 37-48). The motivation to substitute the optimized

MODBUS/TCP/IP stack of Salas with the finite state machine of Hershey is to provide an architecture and method for applying a real time feedback control to the logical or physical network behavior of a complex data communications network, (Hershey, Col. 3, lines 48-51). Thus Claim 24 is also unpatentable over the combined teachings of Salas in view of Hershey.

Double Patenting

23. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

24. Examiner acknowledges the filing of a Terminal Disclaimer regarding US Patent 6,321,272 B1 to Swales, and as such, the double patenting rejection is withdrawn with regard to the Swales ('272) patent. In the interim, Examiner has discovered US Patent US 6,282,454 B1 to Papadopoulos wherein a second double patenting issue has surfaced.

25. Claims 11-21, 24-29 and 31 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-18 of U.S.

Patent No. US 6,282,454 B1. Although the conflicting claims are not identical, they are not patentably distinct from each other because they encompass the same invention as indicated herein above.

Conclusion


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Arrienne M. Lezak whose telephone number is (703)-305-0717. The examiner can normally be reached on M-F 8:30-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David A. Wiley can be reached on (703)-308-5221. The fax phone number for the organization where this application or proceeding is assigned is (703)-305-3718.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)-305-6121.

Arrienne M. Lezak
Examiner
Art Unit 2143

AML



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